Fabric OS

Documentation Updates

Supporting Fabric OS v6.4.1

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Brocade Communications Systems, Incorporated

Document History

Title	Publication number	Summary of changes	Date
Fabric OS Documentation Updates	53-1002063-01	New document	October 7, 2010
Fabric OS Documentation Updates	53-1002063-02	Added update for the *Fabric OS Administrator's Guide*.	November 10, 2010
Fabric OS Documentation Updates	53-1002063-03	Added updates for the following: • *Fabric OS Message Reference* • *DCX Backbone Hardware Reference Manual* • *Brocade 5100 Hardware Reference Manual*	December 17, 2010

Contents

About This Document

In this chapter

How this document is organized

This document contains updates to the following Fabric OS manuals:

TABLE 1   Fabric OS Documentation Updates

Publication Title	Page Number	Publication Date
Access Gateway Administrator's Guide	Updates on page 1	March 2010
CEE Administrator's Guide	No Updates	October 2010
CEE Command Reference	No Updates	October 2010
Fabric OS Administrator's Guide	Updates on page 3	September 2010
Fabric OS Command Reference	Updated on page 5	September 2010
Fabric OS Encryption Administrator's Guide (LKM)	No Updates	March 2010
Fabric OS Encryption Administrator's Guide (RKM)	No Updates	March 2010
Fabric OS Encryption Administrator's Guide (TEMS)	No Updates	March 2010
Fabric OS Encryption Administrator's Guide (SKM)	No Updates	March 2010
Fabric OS Encryption Administrator's Guide (TKLM)	No Updates	October 2010
Fibre Channel over IP Administrator's Guide	No Updates	March 2010
Fabric OS Message Reference	Updates on page 13	March 2010
Fabric OS Troubleshooting and Diagnostics Guide	No updates	March 2010
Fabric Watch Administrator's Guide	Updates on page 15	March 2010
FICON Administrator's Guide	No updates	March 2010
iSCSI Administrator's Guide	No updates	March 2010
Web Tools Administrator's Guide	No updates	March 2010
DCX Backbone Hardware Reference Manual	Updates on page 17	March 2010
Brocade 5100 Hardware Reference Manual	Updates on page 19	July 2008

Document feedback

Quality is our first concern at Brocade and we have made every effort to ensure the accuracy and completeness of this document. However, if you find an error or an omission, or you think that a topic needs further development, we want to hear from you. Forward your feedback to:

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Provide the title and version number of the document and as much detail as possible about your comment, including the topic heading and page number and your suggestions for improvement.

Access Gateway Administrator's Guide

In this chapter

The updates in this chapter are for the *Access Gateway Administrator's Guide*, part number: 53-10001760-01, published March 2010.

Chapter 3, Managing Policies and Features in Access Gateway Mode

Under the heading "Trunking in Access Gateway Mode" on page 48, add the following note at the bottom of the page.

NOTE
N_Port Trunking is not supported for HBAs connected to switches running in Access Gateway mode. This feature is only be supported for HBAs connected to switches running in Native mode.

Fabric OS Administrator's Guide

In this chapter

The updates in this chapter are for the *Fabric OS Administrator's Guide*, part number: 53-1001763-02, published September 2010.

Chapter 14, Interoperability for Merged SANs

In the section "Zoning restrictions" on page 306, add the following item:

- The maximum zone database size is 1 MB and is a combination of the active configuration size and the defined configuration size. For example, if the active configuration size is 200 KB, then the size of the defined configuration cannot exceed 800 KB.

Chapter 16, Administering Licensing

In Table 78 on page 368, add the following entry:

Feature	License	Where license should be installed
Trunking on an HBA	Server Application Optimization and ISL Trunking	Local switch

Chapter 17, Monitoring Fabric Performance

In the section "Limitations of Top Talker monitors" on page 397, add the following item:

- Fabric mode Top Talker monitors and FC-FC routing are not concurrently supported.

Chapter 21, Using the FC-FC Routing Service

In the section "Verifying the setup for FC-FC routing," on page 466 add the following step:

6. Delete fabric mode Top Talker monitors, if they are configured.

 FC-FC routing and fabric mode Top Talker monitors are not concurrently supported. See "Deleting the fabric mode Top Talker monitors" on page 396 for instructions.

Fabric OS Commands Reference

In this chapter

The updates in this chapter are for the *Fabric OS Command Reference*, part number: 53-1001763-02, published September 2010.

New commands in Fabric OS v6.4.1

Add the following new commands to the *Fabric OS Command Reference* for *Fabric OS v6.4.0*.

bufOpMode

Changes or displays the Buffer Optimized Mode.

SYNOPSIS **bufopmode --set** *slot* **-f**

bufopmode --reset *slot*

bufopmode --show *slot*

bufopmode --showall

DESCRIPTION Use this command to display or change the buffer optimized mode on a switch.

When buffer optimized mode is enabled on a slot, additional buffers are allocated on the internal ports. Use this feature, if you have slow draining devices connected to the slot and there are no long distance links on that slot.This command can provide more credit flexibility and may help with congestion. However, the full solution to traffic congestion requires the use of monitoring applications such as Fabric Watch, Bottleneck detection, and Port Fencing.

You must power off the slot before changing the buffer optimized mode. Changes take effect immediately after the slot is powered on.

Enabling buffer optimized mode removes all long distance configurations on that slot. You will be prompted if any long distance configuration is detected.

NOTES The execution of this command is subject to Virtual Fabric or Admin Domain restrictions that may be in place. For details on command availability, refer to the *Fabric OS Command Reference*, Appendix A.

This command is only supported only on the Brocade FC8-16, FC8-32, and FC8-48 blades in a DCX or DCX-4S chassis.

This command is not supported on CP and core blades.

OPERANDS This command has the following operands:

slot Specifies the slot number.

--set	Enables buffer optimized mode on the specified slot. This commands prompts for confirmation before removing any long distance configurations on that slot. Use the **-f** option to execute this command without confirmation.
--reset	Clears buffer optimized mode on the specified slot.
--show	Displays the current buffer optimized mode for the specified slot (On or Off).
--showall	Displays the current buffer optimized mode for all slots.

EXAMPLES To display the buffer optimized mode for all slots in a chassis:

```
switch:admin> bufopmode --showall
Slot 1: buffer optimized mode - Off
Slot 2: buffer optimized mode - Off
Slot 3: buffer optimized mode - Off
Slot 4: buffer optimized mode - Off
Slot 9: buffer optimized mode - Off
Slot 10: buffer optimized mode - Off
Slot 11: buffer optimized mode - Off
Slot 12: buffer optimized mode - On
```

To display current buffer optimized mode for a single slot

```
switch:admin> bufopmode --show 12
Slot 12: buffer optimized mode - On
```

To enable buffer optimized mode for a given slot:

```
switch:admin> bufopmode --set 11
The operation is not supported when the slot is online

switch:admin> bufopmode --reset 12
The operation is not supported when the slot is online

switch:admin> slotpoweroff 11

switch:admin> slotpoweroff 12

switch:admin> bufopmode --set 12
Buffer optimized mode is turned on for slot 11

switch:admin> bufopmode --reset 12
Buffer optimized mode is turned off for slot 12

switch:admin> slotpoweron 11

switch:admin> slotpoweron 12
```

To display the changes:

```
switch:admin> bufopmode --showall
Slot 1: buffer optimized mode - Off
Slot 2: buffer optimized mode - Off
Slot 3: buffer optimized mode - Off
Slot 4: buffer optimized mode - Off
Slot 9: buffer optimized mode - Off
Slot 10: buffer optimized mode - Off
Slot 11: buffer optimized mode - On
Slot 12: buffer optimized mode - Off
```

SEE ALSO   **slotShow, slotPowerOn, slotPowerOff**

portCfgFaultDelay

Configures the fault delay for a single FC port.

SYNOPSIS **portcfgfaultdelay --enable** [*slot/*]*port mode*

portcfgfaultdelay --help

DESCRIPTION Use this command to configure the fault delay of an FC port.

In the event that the link is noisy after a host power cycle, the switch may go into a soft fault state, which means a delay of R_A_TOV. Setting the mode value to 1 reduces the fault delay value to 1.2 seconds. The configuration is stored in nonvolatile memory and is persistent across switch reboots or power cycle.

Use the **portCfgShow** command to display user-configured fault delay settings.

NOTES The execution of this command is subject to Virtual Fabric or Admin Domain restrictions that may be in place. Refer to Chapter 1, "Using Fabric OS Commands" and Appendix A, "Command Availability" for details.

This command is not applicable to non-FC ports.

OPERANDS This command has the following operands:

slot For bladed systems only, specifies the slot number of the port to be configured, followed by a slash (/).

port Specifies the number of the port to be configured, relative to its slot for bladed systems. Use **switchShow** for a listing of valid ports.

mode Specifies the fault delay value for the port number. This operand is required. Valid values are one of the following:

0 Sets the fault delay to R_A_TOV (default)

1 Sets the fault delay to 1.2 seconds.

---help Displays the command usage.

EXAMPLES To set the fault delay of a port to 1.2 seconds:

```
switch:admin> portcfgfaultdelay 2/3 1
```

To display the configuration

```
switch:admin> portcfgshow 2/3 1
Area Number:            138
Speed Level:            AUTO(HW)
Fill Word:              0(Idle-Idle)
AL_PA Offset 13:        OFF
Trunk Port              ON
Long Distance           OFF
VC Link Init            OFF
Locked L_Port           OFF
Locked G_Port           OFF
Disabled E_Port         OFF
ISL R_RDY Mode          OFF
RSCN Suppressed         OFF
Persistent Disable      OFF
NPIV capability         ON
QOS E_Port              AE
Port Auto Disable:      OFF
```

```
Mirror Port              OFF
F_Port Buffers           OFF
Fault Delay              1(1.2sec)

switch:admin> portcfgshow

Ports of Slot 2  0  1  2  3   4  5  6  7   8  9 10 11  12 13 14 15
---------------+--+--+--+--+---+--+--+--+---+--+--+--+---+--+--+--
Speed            AN AN AN AN  AN AN AN AN  AN AN AN AN  AN AN AN AN
Fill Word         0  0  0  0   0  0  0  0   0  0  0  0   0  0  0  0
AL_PA Offset 13 .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Trunk Port       ON ON ON ON  ON ON ON ON  ON ON ON ON  ON ON ON ON
Long Distance    .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
VC Link Init     .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Locked L_Port    .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Locked G_Port    .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Disabled E_Port .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
ISL R_RDY Mode   .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
RSCN Suppressed .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Persistent Disable .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
NPIV capability ON ON ON ON  ON ON ON ON  ON ON ON ON  ON ON ON ON
QOS E_Port       AE AE AE AE  AE AE AE AE  AE AE AE AE  .. .. .. ..
EX Port          .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Mirror Port      .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Rate Limit       .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Credit Recovery ON ON ON ON  ON ON ON ON  ON ON ON ON  ON ON ON ON
Fport Buffers    .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Port Auto Disable. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Fault Delay       0  0  0  1   0  0  0  0   0  0  0  0   0  0  0  0
(output truncated)
```

SEE ALSO   **portCfgShow**

Revised commands in Fabric OS v6.4.0

A new configurable parameter has been added to the **configure** command under Fabric Parameters:

In Table 6 on page 133 add the following row:

TABLE 6   Configure command fabric parameters

Field	Type	Default	Range
Edge hold time	Number (seconds)	220	0-500

The description for Edge hold time is as follows:

Configures the maximum time a frame can wait after it is received on the ingress port and before it is delivered to the egress port. If the frame waits in the egress buffer for more than the configured hold time, the switch drops the frame, replenishes sender's credit, and increments the counters sts_tx_timeout and er_c3_timeout on the TX and RX ports respectively. The frame-timeout indicates a slow draining or a congestion or bottleneck in the fabric. Decreasing hold time on the Edge switches may reduce frame drop counts in the core switches. This parameter is stored persistently in the configuration file. You can configure Edge hold time only on the default switch:

Example:

To configure Edge hold time on a disabled switch:

```
Switch:admin> configure
Configure...

  Fabric parameters (yes, y, no, n): [no] yes
    Domain: (1..239) [1]
    R_A_TOV: (4000..120000) [10000]
    E_D_TOV: (1000..5000) [2000]
    WAN_TOV: (0..30000) [0]
    MAX_HOPS: (7..19) [7]
    Data field size: (256..2112) [2112]
    Sequence Level Switching: (0..1) [0]
    Disable Device Probing: (0..1) [0]
    Suppress Class F Traffic: (0..1) [0]
    Per-frame Route Priority: (0..1) [0]
    Long Distance Fabric: (0..1) [0]
    BB credit: (1..27) [16]
    Disable FID Check (yes, y, no, n): [no]
    Insistent Domain ID Mode (yes, y, no, n): [no]
    Configure edge hold time (yes, y, no, n): [no]
    Edge hold time: (100..500) [220]
  Virtual Channel parameters (yes, y, no, n): [no]
  F-Port login parameters (yes, y, no, n): [no]
  Zoning Operation parameters (yes, y, no, n): [no]
  RSCN Transmission Mode (yes, y, no, n): [no]
  Arbitrated Loop parameters (yes, y, no, n): [no]
  System services (yes, y, no, n): [no]
  Portlog events enable (yes, y, no, n): [no]
  ssl attributes (yes, y, no, n): [no]
  rpcd attributes (yes, y, no, n): [no]
  webtools attributes (yes, y, no, n): [no]
  System  (yes, y, no, n): [no]
```

To configure Edge hold time on an enabled switch:

```
Switch:admin> configure
Not all options will be available on an enabled switch.
To disable the switch, use the "switchDisable" command.

Configure...

  Fabric parameters (yes, y, no, n): [no] yes

  Configure edge hold time (yes, y, no, n): [no] yes
  Edge hold time: (100..500) [220]
  System services (yes, y, no, n): [no]
  ssl attributes (yes, y, no, n): [no]
  rpcd attributes (yes, y, no, n): [no]
  webtools attributes (yes, y, no, n): [no]
  System  (yes, y, no, n): [no]
```

Command RBAC permissions and AD types

Refer to Table 7 for the RBAC and Admin Domain availability of new Fabric OS v6.4.1 commands.

TABLE 7 RBAC availability and admin domain type

Command Name	User	Admin	Operator	Switch Admin	Zone Admin	Fabric Admin	Basic Switch Admin	Security Admin	Admin Domain	Context	Switch Type
bufOpMode	O	OM	OM	OM	O	OM	OM	O	SwitchMember	VF	All
portCfgFaultDelay	O	OM	OM	OM	O	OM	OM	O	PortMember	VF	All

Fabric OS Message Reference Manual

In this chapter

The updates in this chapter are for the *Fabric OS Message Reference*, part number: 53-1001767-01, published March 2010.

SULB System Messages

On page 620, in the SULB System Messages chapter, correct the severity level for the message SULB-1037.

- "Severity - INFO" to be changed to "Severity - ERROR"

Fabric Watch Administrator's Guide

In this chapter

The updates in this chapter are for the *Fabric Watch Administrator's Guide*, part number: 53-10001770-01, published March 2010.

Chapter 1, Fabric Watch notification types

swFabricWatchTrap severity

On page 9, "SNMP traps," a severity description for "swFabricWatch Trap severity," is missing. For complete information about the swFabricWatch Trap severity, please refer to the following sections in the *Fabric OS MIB Reference Guide*, part number: 53-1001768-01:

- "Understanding SNMP basics"
- "Loading Brocade MIBs"
- Table 14: SW-MIB Traps

SNMP trap counters

The following SNMP information will be added in the next release of Fabric Watch:

- When a counter is in the "in-between" state, Fabric Watch sends an informational SNMP trap. (See "In-between buffer values" on page 16 for an explanation of the concepts of "in-between" boundaries and high and low thresholds.)
- When a counter is above the high threshold or below the low threshold, Fabric Watch sends a warning SNMP trap *except* for the power supply area of the environment class, CPU, and memory:
  - The severity of a Fabric Watch SNMP trap for the power supply area of the environment class will always be informational *except* when the counter value is below the low threshold. When the counter value of the power supply is below threshold, Fabric Watch sends a warning SNMP trap.
  - The severity of a Fabric Watch SNMP trap for CPU and memory will always be informational.

Chapter 2, Fabric Watch Thresholds

On page 15 and 16, the sections "High and low thresholds" have been changed to include the following expanded threshold categories:
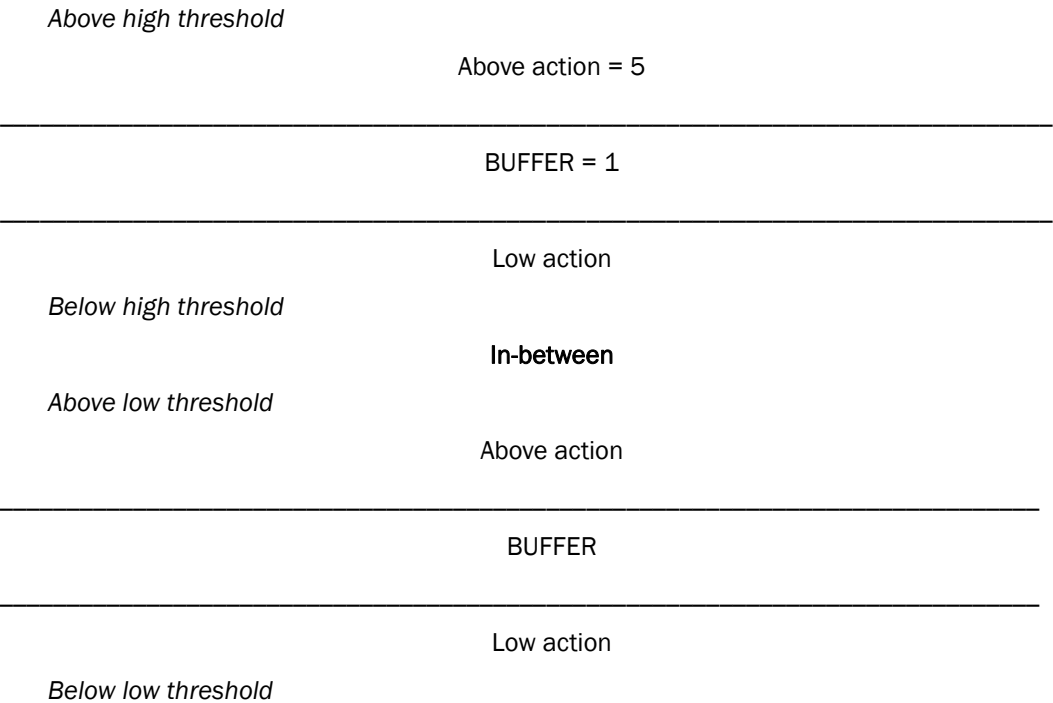
- Above high threshold
- Below high threshold
- Above low threshold
- Below low threshold

NOTE

The *above low threshold* action applies only to the portThConfig command. It does not apply to the thConfig and sysMonitor commands.

In-between buffer values

The *below high threshold* is the term used to configure "in between" buffer values, as shown below. In this example, the high threshold value is 5 and the buffer value is 1. Therefore, the "in-between" boundary value is 4. Enter the portThConfig command using the following parameters.

```
portthconfig --set port -area crc -highth -value 4 -trigger below -action raslog
```

Above high threshold

<div align="center">Above action = 5</div>

_____

<div align="center">BUFFER = 1</div>

_____

<div align="center">Low action</div>

Below high threshold

<div align="center">**In-between**</div>

Above low threshold

<div align="center">Above action</div>

_____

<div align="center">BUFFER</div>

_____

<div align="center">Low action</div>

Below low threshold

Chapter 4, Fabric Watch Activation

On page 30 "snmpConfig -set" should appear as "snmpConfig `--set`".

DCX Backbone Hardware Reference Manual

In this chapter

The updates in this chapter are for the *DCX Backbone Hardware Reference Manual*, part number: 53-10000685-12, published March 2010.

Appendix D, Port Numbering Template

In two illustrations the port numbers have been reversed in the tables under each figure.

For Figure 42 for the FC8-32 port blade on page 133, the table under the illustration should read as follows.

| 1 | Blade Power LED | 3 | FC ports 16-31 (bottom to top) |
| 2 | Blade Status LED | 4 | FC ports 0-15 (bottom to top) |

For Figure 43 for the FC8-48 port blade on page 134, the table under the illustration should read as follows.

| 1 | Blade Power LED | 3 | FC ports 24-47 (bottom to top) |
| 2 | Blade Status LED | 4 | FC ports 0-23 (bottom to top) |

Brocade 5100 Hardware Reference Manual

In this chapter

The updates in this chapter are for the *Brocade 5100 Hardware Reference Manual*, part number: 53-10000854-02, published July 2008.

Chapter 3, Brocade 5100 Operation

For Table 1 on page 19, replace the first row, with the LED Name Power Supply Status (right) with the following row.

LED Name	LED Color	Status of Hardware	Recommended Action
Power Supply Status	No light	Primary power cord is disconnected or is not actively powered, or power supply has failed.	Verify the power supply is on and seated and the power cord is connected to a functioning power source.
	Steady green	Power supply is operating normally.	No action required.
	Flashing green	A power supply and fan assembly fault has occurred for one of the following reasons: • The power supply or fan in the assembly has failed. • The FRU was disabled by a user. • The FRU power switch has been turned off or the unit has been unplugged.	Take one of the following actions: • Replace the FRU. • Verify that the power supply/fan assembly FRU has been enabled. • Check the power switch and plug.

LED Name	LED Color	Status of Hardware	Recommended Action
Port Status	No light	No signal or light carrier (media or cable) detected.	Check transceiver and cable.
	Slow flashing green (flashing in two-second intervals)	Port is online but segmented because of a loopback cable or incompatible switch connection.	No action required.
	Fast flashing green (flashing in half-second intervals)	Port is online and an internal loopback diagnostic test is running.	No action required.
	Flickering green (steady with random flashes)	Port is online and frames are flowing through the port.	No action required.
	Steady green	Port is online (connected to external device) but has no traffic.	No action required.
	Slow flashing amber (flashing in two-second intervals)	Port is disabled (because of diagnostics or the **portDisable** command).	Verify the diagnostic tests are not running. Reenable the port using the **portEnable** command.
	Fast flashing amber (flashing in half-second intervals)	Port is faulty.	Check the management interface and the error log for details on the cause of status. Contact Technical Support if required.
	Steady amber (for more than five seconds)	Port is receiving light or signal carrier at 4 Gbps; but is not yet online.	No action required.